Christina Kabbash et al.

Serial No.: Filed:

Not Yet Known March 29, 2004

Page 2

In the claims:

Please cancel claims 27-40, 58, and 59 without disclaimer or prejudice to applicants' right to pursue the subject matter of these claims in a future continuation or divisional application.

1. (currently amended) A method for inhibiting growth of a bacterium which consists essentially of contacting the bacterium with a compound having the structure:

$$\begin{array}{c|c} R_4 & CH_3 \\ \hline \\ R_3 & R_1 & CH_3 \\ \hline \\ R_2 & CH_3 \end{array}$$

wherein each of R, R, R, R, R, and R, comprises independently H, F, Cl, Br, I, -OH, -OR, , -CN, -COR, , -SR, $-N(R_1)$, $-NR_1COR_2$, $-NO_2$, $-(CH_2)$, OR_1 , $-(CH_2)$, $X(R_1)$, -(CH $_{2}$) $_{p}$ XR $_{7}$ CO R $_{8}$, a straight chain or branched, substituted or unsubstituted $C_1 - C_{10}$ alkyl, $C_2 - C_{10}$ alkenyl, C_2 - C_{10} alkynyl, C_3 - C_{10} cycloalkyl, C_3 - C_{10} cycloalkenyl, thioalkyl, methylene thioalkyl, acyl, phenyl, substituted phenyl, or heteroaryl; wherein a linkage to the benzene ring may alternatively be -N-, -S-, -O- or -C-; wherein R, R may be independently H, F, Cl, Br, I, -OH, -CN, -COH, -SH₂ , $-NH_2$, -NHCOH, $-(CH_2)_pOH$, $-(CH_2)_pX(CH_2)$, $-(CH_2)_pXCOH$, a straight chain or branched, substituted or unsubstituted C_1 - C_{10} alkyl, C_2 - C_{10} alkenyl, C_2 - C_{10} alkynyl, C_3 - C_{10} cycloalkyl, C $_{\scriptscriptstyle 10}$ -C $_{\scriptscriptstyle 10}$ cycloalkenyl, thioalkyl, methylene thioalkyl, acyl, phenyl, substituted phenyl, or heteroaryl; wherein A may be -N 2 - , -NH-, -C=C=CH 2 -, -C=C-C 2 HOH-, -

Applicants: Christi

Christina Kabbash 'et al.

Serial No.: Filed:

Not Yet Known March 29, 2004

Page 3

C=C-CH $_2$ -, -CH $_2$ -CH $_2$ -O-, -CH $_2$ -CH $_2$ -CH $_2$ -O-, -S-, -S(=O) $_2$ -, -C=O-, -C=O-O-, -NH-C=O-, -C=O-NH-; and wherein Q, p, N- and X n and X may independently be an integer from 1 to 10, or if Q is 1 A comprises a (C $_1$ -C $_{10}$)-alkyl chain, (C $_1$ -C $_{10}$)-alkenyl chain or (C $_1$ -C $_{10}$)-alkynyl chain which is branched or unbranched, substituted or unsubstituted and can optionally be interrupted 1 to 3 times by -O- or -S- or -N-; or a pharmaceutically acceptable salt or ester thereof, which compound is present in a concentration effective to inhibit growth of the bacterium.

- 2. (original) The method of claim 1, wherein A comprises an (C_1 - C_{10})-alkylene chain, (C_1 - C_{10})-alkyl chain, (C_1 - C_{10})-alkenyl chain or (C_1 - C_{10})-alkynyl chain which is branched or unbranched, substituted or unsubstituted and can optionally be interrupted 1 to 3 times by -0- or -S- or -N-.
- 3. (original) The method of claim 1, wherein $R_1 = R_4 = CH_3 \text{ or } -OH,$ $R_2 = R_3 = R_5 = R_6 = H \text{ or } -OH,$ $A = CH_2,$ and Q = 3.
- 4. (original) The method of claim 1, wherein $R_3 \ = \ Cl \, ,$ $R_1 \ \ R_2 \ \ R_4 \ \ R_5 \ \ R_6 \ = \ H \ or \ -OH \, ,$ and $O \ = \ O$.

Christina Kabbash et al.

Serial No.: Filed:

Not Yet Known March 29, 2004

Page 4

5. (original) The method of claim 1, wherein

$$R_3 = -C - C$$

 $R_6 = CH(CH_3)_2$

$$R_1 = R_2 = R_4 = R_5 = H \text{ or } -OH,$$

and Q = 0.

6. (original) The method of claim 1, wherein

 $R_1 = C1$

 $R_6 = C_2 H_5,$

$$R_1 = R_2 = R_4 = R_5 = H \text{ or } -OH_1$$

and Q = 0.

- 7. (original) The method of claim 1, wherein the bacterium is Legionella pneumophila, Mycobacterium tuberculosis, Bacillus subtilis, Bacillus Megaterium, Pseudomonas Oleovorans, Alcaligenes eutrophus, Rhodococcus sp., Citrobacter freundi, Group A Streptococcus sp., Coag neg Staphylococcus aureus or Nocardia sp.
- 8. (original) The method of claim 1, wherein the bacterium is Legionella pneumophila.
- 9. (original) The method of claim 1, wherein the bacterium is *Mycobacterium tuberculosis*.
- 10. (original) The method of claim 1, wherein the bacterium is in a eukaryotic cell.
- 11. (original) The method of claim 1, wherein the concentration of the compound is from about $5\mu g/ml$ to about $100\mu g/ml$.

Christina Kabbash et al.

Not Yet Known Serial No.: March 29, 2004 Filed:

Page 5

(original) The method of claim 1, wherein the concentration of the compound is $20\mu g/ml$.

13. (currently amended) A method for alleviating the symptoms of a bacterial infection in a subject which consists essentially of administering to the subject an amount of a compound having the structure:

$$\begin{array}{c|c}
R_{1} & CH_{3} \\
R_{2} & CC_{2}R_{4} \\
R_{3} & CH_{3}
\end{array}$$

wherein each of R₁, R₂, R₃, R₄, R₅ and R₆ may be independently H, F, Cl, Br, I, -OH, -OR, , -CN, -COR, $-SR_{7}$, $-N(R_{7})_{2}$, $-NR_{7}COR_{8}$, $-NO_{2}$, $-(CH_{2})_{p}OR_{7}$, $-(CH_{2})$ $_{\text{p}}$ X(R $_{\text{r}}$) $_{\text{2}}$, -(CH $_{\text{2}}$) $_{\text{p}}$ XR $_{\text{r}}$ COR $_{\text{8}}$, a straight chain or branched, substituted or unsubstituted C₁-C₁₀ alkyl, C $_{\scriptscriptstyle 2}$ -C $_{\scriptscriptstyle 10}$ alkenyl, C $_{\scriptscriptstyle 2}$ -C $_{\scriptscriptstyle 10}$ alkynyl, C $_{\scriptscriptstyle 3}$ -C $_{\scriptscriptstyle 10}$ cycloalkyl, C $_{\scriptscriptstyle 3}$ -C cycloalkenyl, thioalkyl, methylene thioalkyl, acyl, phenyl, substituted phenyl, or heteroaryl; linkage to the benzene ring alternatively be -N-, -S-, -O- or -C-; wherein R, or $R_{\rm g}$ may be independently H, F, Cl, Br, I, -OH, -CN, -COH, $-SH_{2}$, $-NH_{2}$, -NHCOH, $-(CH_{2})_{p}OH$, $-(CH_{2})_{p}X(CH_{2})$, $-(CH_{2})_{p}X(CH_{2})$) XCOH, a straight chain or branched, substituted or unsubstituted C $_{\scriptscriptstyle 1}$ -C $_{\scriptscriptstyle 10}$ alkyl, C $_{\scriptscriptstyle 2}$ -C $_{\scriptscriptstyle 10}$ alkenyl, C $_{\scriptscriptstyle 2}$ -C $_{\scriptscriptstyle 10}$ alkynyl, C $_{_3}$ -C $_{_{10}}$ cycloalkyl, C $_{_3}$ -C $_{_{10}}$ cycloalkenyl, methylene thioalkyl, acyl, thioalkyl, substituted phenyl, or heteroaryl; wherein A may be -N 2 - , -NH-, -C=C=CH 2 - , -C≡C-C 2 HOH-, -C≡C-CH 2 - , -CH 3 -CH

Christina Kabbash et al.

Serial No.: Filed:

Not Yet Known March 29, 2004

Page 6

 $_2$ -O-, -CH $_2$ -CH $_2$ -CH $_2$ -O-, -S-, -S(=0) $_2$ -, -C=O-, -C=O-O-, -NH-C=O-, -C=O-NH-; and wherein Q, p, N and X n and X may independently be an integer from 1 to 10, or if Q is 1 A may be a (C $_1$ -C $_{10}$)-alkyl chain, (C $_1$ -C $_{10}$)-alkenyl chain or (C $_1$ -C $_{10}$)-alkynyl chain which is branched or unbranched, substituted or unsubstituted and can optionally be interrupted 1 to 3 times by -O-or -S- or -N-; or a pharmaceutically acceptable salt or ester thereof, which compound is present in a concentration effective to inhibit bacterial growth and thus alleviate the symptoms of the bacterial infection in the subject.

- 14. (original) The method of claim 13, wherein A comprises an $(C_1 C_{10})$ -alkylene chain, $(C_1 C_{10})$ -alkyl chain, $(C_1 C_{10})$ -alkenyl chain or $(C_1 C_{10})$ -alkynyl chain which is branched or unbranched, substituted or unsubstituted and can optionally be interrupted 1 to 3 times by -O- or -S- or -N-.
- 15. (original) The method of claim 13, wherein $R_1 = R_4 = CH_3 \text{ or } -OH,$ $R_2 = R_3 = R_5 = R_6 = H \text{ or } -OH,$ $A = CH_2,$ and Q = 3.
- 16. (original) The method of claim 13, wherein $R_3 = Cl,$ $R_1 = R_2 = R_4 = R_5 = R_6 = H \text{ or -OH,}$ and Q = 0.

Christina Kabbash et al.

Serial No.: Filed:

Not Yet Known March 29, 2004

Page 7

17. (original) The method of claim 13, wherein

$$R_3 = -C$$

$$R_6 = CH(CH_3)_2$$
,
 $R_1 = R_2 = R_4 = R_5 = H \text{ or } -OH$,
and $Q = 0$.

18. (original) The method of claim 13, wherein $R_{_{3}} \; = \; C1 \, ,$ $R_{_{6}} \; = \; C_{_{2}}H_{_{5}} \, ,$

 $R_1 = R_2 = R_4 = R_5 = H \text{ or } -OH,$ and Q = 0.

- 19. (original) The method of claim 13, wherein the bacterial infection is associated with Legionella pneumophila, Mycobacterium tuberculosis, Bacillus subtilis, Bacillus Megaterium, Pseudomonas Oleovorans, Alcaligenes eutrophus, Rhodococcus sp., Citrobacter freundi, Group A Streptococcus sp., Coag neg Staphylococcus aureus or Nocardia sp.
- 20. (original) The method of claim 13, wherein the bacterial infection is associated with Legionella pneumophila.
- 21. (original) The method of claim 13, wherein the bacterial infection is associated with *Mycobacterium tuberculosis*.
- 22. (original) The method of claim 13, wherein the subject is a human or an animal.
- 23. (original) The method of claim 13, wherein the bacterial infection is associated with Leprosy, Brucella or Salmonella.

Christina Kabbash et al.

Serial No.:

Not Yet Known March 29, 2004

Filed: Page 8

- 24. (original) The method of claim 13, wherein the concentration of the compound is from about 5 μ g/ml blood of the subject to about 180 μ g/ml blood of the subject.
- 25. (original) The method of claim 13, wherein the concentration of the compound is 90 μ g/ml blood of the subject.
- 26. (original) The method of claim 13, wherein the administration to the subject is oral.

27-40. (canceled)

41. (currently amended) A method of altering a pathway of fatty acid synthesis in a bacterium which comprises contacting the bacterium with a compound having the structure:

$$\begin{array}{c|c} R_{5} & CH_{3} \\ \hline \\ R_{2} & CC_{2}R_{8} \\ \hline \\ R_{1} & CH_{3} \end{array}$$

wherein each of R₁, R₂, R₃, R₄, R₅ and R₆ may be independently H, F, Cl, Br, I, -OH, -OR₇, -CN, -COR₇, -SR₇, -N(R₇)₂, -NR₇ COR₈, -NO₂, -(CH₂)_p OR₇, -(CH₂)_p X(R₇)₂, -(CH₂)_p XR₇ COR₈, a straight chain or branched, substituted or unsubstituted C₁-C₁₀ alkyl, C₂-C₁₀ alkenyl, C₂-C₁₀ alkynyl, C₃-C₁₀ cycloalkyl, C₃-C₁₀ cycloalkenyl, thioalkyl, methylene thioalkyl, acyl, phenyl, substituted phenyl, or heteroaryl; wherein a linkage to the benzene ring may alternatively be -N-, -S-, -O- or -C-; wherein R₇ or

Applicants: Serial No.: Christina Kabbash et al.

Filed:

Not Yet Known March 29, 2004

Page 9

R , may be independently H, F, Cl, Br, I, -OH, -CN, -COH, -SH, , -NH, , -NHCOH, -(CH,) DOH, -(CH,) DX(CH,), $-(CH_{2})_{p}$ XCOH, a straight chain or branched, substituted or unsubstituted C, -C, alkyl, C, -C, alkenyl, C_2 - C_{10} alkynyl, C_3 - C_{10} cycloalkyl, C_3 - C_{10} cycloalkenyl, thioalkyl, methylene thioalkyl, acyl, phenyl, substituted phenyl, or heteroaryl; wherein A may be -N, -, -NH-, -C=C=CH, -, -C=C-C, +OH-, -C=C-CH, -, -CH , -CH , -O- , -CH , -CH , -CH , -O- , -S- , -S (=O) , - , -C=O-, -C=O-O-, -NH-C=O-, -C=O-NH-; and wherein Q, p, \aleph and X n and X may independently be an integer from 1 to 10, or if Q is 1 A may be a (C, -C,)-alkyl chain, $(C_{1}-C_{10})$ -alkenyl chain or $(C_{1}-C_{10})$ -alkynyl chain which is branched or unbranched, substituted or unsubstituted and can optionally be interrupted 1 to 3 times by -O- or -S- or -N-; or a pharmaceutically acceptable salt or ester thereof, thus altering the pathway of fatty acid synthesis.

- 42. (original) The method of claim 41, wherein A comprises an (C $_{_{1}}$ -C $_{_{10}}$)-alkylene chain, (C $_{_{1}}$ -C $_{_{10}}$)-alkyl chain, (C $_{_{1}}$ -C $_{_{10}}$)alkenyl chain or $(C_1 - C_{10})$ -alkynyl chain which is branched or unbranched, substituted or unsubstituted and can optionally be interrupted 1 to 3 times by -O- or -S- or -N-.
- 43. (original) The method of claim 41, wherein $R_1 = R_4 = CH_3 \text{ or } -OH_4$ $R_{2} = R_{3} = R_{5} = R_{6} = H \text{ or } -OH,$ $A = CH_2$ and Q = 3.
- 44. (original) The method of claim 41, wherein

Applicants: Serial No.: Filed: Christina Kabbash et al.

Not Yet Known March 29, 2004

Page 10

$$R_3 = C1$$
,
 $R_1 = R_2 = R_4 = R_5 = R_6 = H \text{ or } -OH$,
and $O = O$.

45. (original) The method of claim 41, wherein

- 46. (original) The method of claim 41, wherein the bacterium is Legionella pneumophila, Mycobacterium tuberculosis, Bacillus subtilis, Bacillus Megaterium, Pseudomonas Oleovorans, Alcaligenes eutrophus, Rhodococcus sp., Citrobacter freundi, Group A Streptococcus sp., Coag neg Staphylococcus aureus or Nocardia sp.
- 47. (original) A method of inhibiting growth of a bacterium which consists essentially of contacting the bacteria with an enoyl reductase inhibitor so as to inhibit the reductase and thus inhibit the growth of the bacterium.
- 48. (currently amended) A method for determining whether or not a bacterium is sensitive to a compound having the structure:

$$\begin{array}{c|c}
R_{5} & CH_{3} \\
R_{4} & CCR_{6}R_{7})_{N} & CH_{3} \\
R_{3} & R_{2} & CH_{3}
\end{array}$$

Applicants: Serial No.: Filed: Christina Kabbash et al.

Not Yet Known March 29, 2004

Page 11

wherein each of $R_{\scriptscriptstyle 1}$, $R_{\scriptscriptstyle 2}$, $R_{\scriptscriptstyle 3}$, $R_{\scriptscriptstyle 4}$, $R_{\scriptscriptstyle 5}$ and $R_{\scriptscriptstyle 6}$ may be independently H, F, Cl, Br, I, -OH, -OR, , -CN, -COR, , $-SR_{1}$, $-N(R_{1})_{2}$, $-NR_{1}$ COR_{8} , $-NO_{2}$, $-(CH_{2})_{p}$ OR_{1} , $-(CH_{2})_{p}$) X(R,), -(CH,) XR, COR, a straight chain or branched, substituted or unsubstituted C, -C, alkyl, C, -C 10 alkenyl, C 2-C 10 alkynyl, C 3-C 10 cycloalkyl, C 3-C cycloalkenyl, thioalkyl, methylene thioalkyl, acyl, phenyl, substituted phenyl, or heteroaryl; wherein a linkage to the benzene ring may alternatively be -N-, wherein R, or R, may be independently S-, -O- or -C-; H, F, Cl, Br, I, -OH, -CN, -COH, -SH $_{\scriptscriptstyle 2}$, -NH $_{\scriptscriptstyle 2}$, -NHCOH, - $(CH_2)_p$ OH, $-(CH_2)_p$ $X(CH_2)_r$ $-(CH_2)_p$ XCOH, a straight chain or branched, substituted or unsubstituted C₁-C₁₀ alkyl, $C_2 - C_{10}$ alkenyl, $C_2 - C_{10}$ alkynyl, $C_3 - C_{10}$ cycloalkyl, C₃-C₁₀ cycloalkenyl, thioalkyl, methylene thioalkyl, acyl, phenyl, substituted phenyl, heteroaryl; wherein A may be -N2-, -NH-, -C=C=CH2-, - $C = C - C_2 + OH -$, $-C = C - CH_2 -$, $-CH_2 - CH_2 - O -$, $-CH_2 - CH_2 - CH_2 - O -$, -S-, -S(=0), -, -C=0-, -C=0-0-, -NH-C=0-, -C=0-NH-; and wherein Q, p, N and X n and X may independently be an integer from 1 to 10, or if Q is 1 A may be a (C $_1$ -C $_{10}$)-alkyl chain, $(C_1 - C_{10})$ -alkenyl chain or $(C_1 - C_{10})$ alkynyl chain which is branched or unbranched, substituted or unsubstituted and can optionally be interrupted 1 to 3 times by -O- or -S- or -N-; or a pharmaceutically acceptable salt or ester thereof, which comprises contacting the bacterium with a concentration of the compound effective to inhibit growth of the bacterium if the bacterium is sensitive to the compound, thereby determining whether or not the bacterium is sensitive to the compound.

Christina Kabbash et al.

Serial No.: Filed:

Not Yet Known March 29, 2004

Page 12

- 49. (original) The method of claim 48, wherein A comprises an (C_1-C_{10}) -alkylene chain, (C_1-C_{10}) -alkyl chain, (C_1-C_{10}) -alkenyl chain or (C_1-C_{10}) -alkynyl chain which is branched or unbranched, substituted or unsubstituted and can optionally be interrupted 1 to 3 times by -O- or -S- or -N-.
- 50. (original) The method of claim 48, wherein $R_1 = R_4 = CH_3,$ $R_2 = R_3 = R_5 = R_6 = H \text{ or -OH},$ $A = CH_2 \text{ or -OH},$ and Q = 3.
- 51. (original) The method of claim 48, wherein $R_{_{3}} = C1\,,$ $R_{_{1}} \ R_{_{2}} \ R_{_{4}} \ R_{_{5}} \ R_{_{6}} = \mbox{H or -OH,}$ and Q = 0.
- 52. (original) The method of claim 48, wherein

$$R_3 = -C$$

 $R_6 = CH(CH_3)_2$, $R_1 = R_2 = R_4 = R_5 = H \text{ or } -OH$, and Q = 0.

- 53. (original) The method of claim 48, wherein $R_3 = Cl\,,$ $R_6 = C_2H_5\,,$ $R_1 = R_2 = R_4 = R_5 = H \text{ or } -OH\,,$ and Q = 0.
- 54. (original) The method of claim 48, wherein the bacterium is

Christina Kabbash et al.

Serial No.: Filed:

Not Yet Known March 29, 2004

Page 13

in a cell.

- 55. (original) The method of claim 48, wherein the bacterium is selected from the group consisting of Legionella pneumophila, Bacillus subtilis, Caulobacter crescentus, Citrobacter freundi, Nocardia sp., Rhodobacter spheroides, Group A Streptococcus sp., Coag neg Staphylococcus aureus and Mycobacterium tuberculosis.
- 56. (original) The method of claim 48, wherein the concentration of the compound is from about 5μ g/ml to about 100μ g/ml.
- 57. (original) The method of claim 48, wherein the concentration of the compound is 20 μ g/ml.

58-59. (canceled)